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BANNER & WITCOFF
1001 G STREET N W
SUITE 1100
WASHINGTON, DC 20001

EXAMINER

MOORE, KARLA A

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/831,599

Applicant(s)

SCHRAUWEN ET AL.

Examiner

Karla Moore

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-38 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-25, 27-35, 37 and 38 is/are rejected.
- 7) ☒ Claim(s) 26 and 36 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/27/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 37 and 38 depend from cancelled claims. As the Examiner is not sure whether they were intended to be cancelled or if they were intended to be part of the examined claims (and from what claim(s) they depend), they have not been examined. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20-23 and 31-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,961,798 to Robinson et al. in view of U.S. Patent No. 6,132,562 to Baumecker et al.

7. Robinson al. disclose the apparatus for applying at least one coating to objects by vapor deposition (PVD) under vacuum substantially as claimed and comprising: a PVD device (Figure 2B, 94) for coating an object (20) under vacuum; a transport device (82, 86, 88) which extends through the PVD device, wherein the transport device is adapted to transport objects arranged on carriers (74), and the PVD device is adapted for semi-continuous treatment of the objects arranged on carriers; a

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preprocessing device (92) for performing a preprocessing on the object; and a postprocessing device (96) for postprocessing the object, wherein the transport device extends through the PVD device, preprocessing device and postprocessing device.

8. With respect to claim 21, the carriers are elongate and object holders (Figure 3, 74) are present on the carriers, the object holders being rotatable (column 8, rows 57-67) and the transport device being adapted to move the carriers substantially in the longitudinal direction and to rotate the object holders in the PVD device.

9. With respect to claim 31, a loading/unloading station (Figure 2B, 70) is placed between the postprocessing device and the preprocessing device for unloading processed objects and loading objects for processing.

10. With respect to claim 32, an object holder (26) is present on the carrier, the object holder being interchangeable with an object holder on another carrier (see Figure 3, column 6, rows 59-64). Examiner notes that while not explicitly disclosed that the object holders/spindles are interchangeable, they are constructed identically and would therefore be interchangeable.

11. With respect to claim 33, the object holder is placed on a vertically extending shaft (146) mounted rotatably in the carrier (column 9, rows 46-67).

12. With respect to claims 34 and 35, a toothed wheel (Figures 10 and 12; column 9, rows 46-67) is arranged on the shaft for driving the shaft in rotation and the toothed wheel is arranged under a top side of the carrier.

13. However, Robinson et al. fail to teach at least one lock separating the PVD device from an ambient environment.

14. Baumecker et al. teach the use of an airlock for maintaining a pressure difference between a processing chamber and an exterior environment (column 4, rows 1-14).

15. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an airlock in order to maintain a pressure difference between a processing chamber and an exterior environment as taught by Baumecker et al.

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16. Additionally, the lock disclosed by Baumecker et al. is a single lock, with a transport device (38) extending through the lock and the lock is adapted to simultaneously feed into and out of a PVD device (i.e. the transport device extends in two directions through the PVD device) for the purpose of permitting a compact arrangement of the transport device and thus a compact spatial construction of the coating chamber (column 2, rows 50-53).

17. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. and Baumecker et al. as applied to claims 20-23 and 31-35 above, and further in view of U.S. Patent No. 3,584,847 to Hammond et al.

18. Robinson et al. and Baumecker et al. disclose the invention substantially as claimed and as described above.

19. However, the prior art fails to teach a buffer for the carrier arranged between the preprocessing device and the PVD device or the PVD device and the postprocessing device.

20. Hammond et al. teach the use of a buffer chamber on either side of a sputtering chamber to protect the atmosphere inside the chamber from contamination (column 3, rows 15-30).

21. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a buffer on either side of the PVD chamber in the prior art in order to protect the atmosphere inside the chamber from contamination as taught by Hammond et al.

22. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. and Baumecker et al. as applied to claims 20-23 and 31-35 above, and further in view of U.S. Patent No. 4,310,614 to Connell et al.

23. The prior art discloses the invention substantially as claimed and as described above.

24. However, the prior art fails to disclose the preprocessing device comprising a blower for blowing dust from objects.

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25. Connell et al. teach the use of an ion air gun prior to the entrance of a substrate into a vapor deposition apparatus to remove any accumulated dust particles on the substrate surface (column 12, rows 14-21).

26. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a blower in the pre-processing device of the prior art in order to remove dust particles from the surface of an object to be treated as taught by Connell et al.

27. Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson et al. and Baumecker et al. as applied to claims 20-23 and 31-35 above, and further in view of U.S. Patent No. 4,853,283 to Skolnick.

28. Robinson et al. and Hammond et al. disclose the invention substantially as claimed and as described above.

29. With respect to the limitations of claim 29, Robinson et al. further discloses the preprocessing device as capable of etching, which could be used as a surface process prior to the application of a coating.

30. However, the prior art fails to teach a processing device (pre-or post-) comprising an application device for applying a lacquer and irradiating the lacquer with UV radiation.

31. Skolnick teaches the applying a layer of lacquer and curing the lacquer using UV radiation for the purpose of forming a protective layer both before and after applying a depositing a PVD film (3, rows 27-45, column 4, rows 43-51 and column 5, rows 8-25).

32. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a pre- and/or a post-processing chamber capable of applying and curing a lacquer coating in order to form protective layers that "sandwich" a PVD film as taught by Skolnick.

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Allowable Subject Matter

33. Claims 26 and 36 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

34. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails teach or fairly suggest buffers adapted to move carriers in transverse direction or a toothed wheel which enters openings arranged in the carrier and protrudes outside walls of the carrier as recited. Additionally, no other reference provided motivation for adding either of the features to the prior art cited above.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

km
April 7, 2003


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700